Design, Construction, Supply, Erection, Testing & Commissioning of STP of 120 KLD capacity complete in all respects including all contingent Electrical, Mechanical, piping & instrumentation works and including operation & maintenance at IMHANS, Kozhikode

Part 1

TECHNICAL BID

TENDER NO. HLL/ID/15/02

April 2015

HLL LIFECARE LIMITED
Infrastructure Development Division
"Adarsh" TC 6/1781, Vettamukku,
Thirumala Post Office
Thiruvananthapuram-695006

DISCLAIMER

HLL Lifecare Limited, India (HLL) has prepared this document as consultant to **Institute of Mental Health and Neurosciences (IMHANS),** Kozhikode to give bidders, background information on the Project. The information is provided to bidders on the terms and conditions set out in this document and any other terms and conditions subject to which such information is provided.

This document is not an agreement, is not an offer or invitation to any other party. The purpose of this document is to provide interested parties with information to assist the formulation of their bid. The information is not intended to be exhaustive. Bidders are required to make their own inquiries and respondents will be required to confirm in writing that they have done so and they do not rely solely on the information in this document.

The information is provided on the basis that it is non – binding on Institute of Mental Health and Neurosciences (IMHANS) or HLL Lifecare Limited, any of its authorities or agencies or any of their respective officers, employees, agents or advisors.

IMHANS, reserves the right not to proceed with the Project or to change the configuration of the Project, to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any party submitting the Tender.

While HLL Lifecare Limited and IMHANS have taken due care in the preparation of the information contained herein and believe it to be accurate neither Institute of Mental Health and Neurosciences (IMHANS), nor HLL Lifecare Limited, any of its authorities or agencies nor any of their respective officers, employees, agents or advisors gives any warranty or make any representations, express or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

No reimbursement of cost of any type will be paid to persons or entities submitting their Tender.

SCHEDULE OF THE TENDER PROCESS

EVENT	DATE
Sale of document begins	02.05.2015
Last date for sale of document	11.05.2015
Last date for submission of queries	07.05.2015
Last date for issue of addendum	08.05.2015
Last date for submission of completed document	11.05.2015
Date of opening of the bid	11.05.2015

The Tender document can be downloaded from the HLL web site www.lifecarehll.com from 02.05.2015 onwards and the cost of tender documents is **Rs.1575/-** (Rupees One thousand Five hundred and Seventy Five only) shall be submitted along with the tender in the form of DD taken in favour of HLL Lifecare Limited payable at Thiruvananthapuram.

All queries shall be addressed to and completed Application forms shall be submitted before the specified date and time at the following address:

Deputy Vice President (T)

HLL Lifecare Limited,
Infrastructure Development Division,
"Adarsh", T.C 6/1718(1),
Vettamukku, Thirumala PO,
Thiruvananthapuram- 695 006.

Phone - 0471 236 5872/73
TeleFax – 0471 236 8144

DEFINITIONS

"Engineer" and EIC means the person(s) named by the Employer in the Contract or appointed from time to time by the Employer, who acts on behalf of the Employer under the contract.

"Employer" means Institute of Mental Health and Neurosciences (IMHANS), which has invited bids for the project.

"HLL" means HLL Lifecare Limited, consultant to **Institute of Mental Health and Neurosciences (IMHANS),** for the project.

"IMHANS " means Institute of Mental Health and Neurosciences (IMHANS),

"Project" **means** Design, Construction, Supply, Erection, Testing & Commissioning of STP of 120 KLD capacity complete in all respects including all contingent Electrical, Mechanical, piping & instrumentation works and including operation & maintenance at IMHANS, Kozhikode **on a turnkey basis.**

"Site" means the place where the above-mentioned project work is to be executed.

"Tender" or **"Bid"** shall mean the offer submitted by a Tenderer in accordance with this document for the above project.

"Tenderer" means a firm that has submitted its Tender of Bid for the Project**.**

SECTION I

1. NOTICE INVITING TENDER (NIT)

1.1 GENERAL

1.1.1 Institute of Mental Health and Neurosciences (IMHANS) invites sealed tenders from reputed Indian Firms for **Design, Construction, Supply, Erection, Testing & Commissioning of of 120 KLD capacity complete in all respects including all contingent Electrical, Mechanical, piping & instrumentation works and including operation & maintenance at IMHANS, Kozhikode**

1.1.2 IMHANS invites sealed tenders for the above-mentioned work (clause 1.1.1).

Tender Security amount	Rs 50,000 (Rs. Fifty Thousand only)
Cost of Tender form **(Non-refundable)**	Rs.1575/- (Rs. One Thousand Five hundred and Seventy Five Only) payable by a Demand Draft in favour of "HLL Lifecare Limited" at Thiruvananthapuram" to be submitted along with the submission of tender
Completion period of the Work	3 Months (Three Months Only) from the date of issue of letter of acceptance
Last Date & time of Submission of Tender	11.05.2015, up to 14.00 Hrs
Date & time of opening of Technical bid (Technical Package)	11.05.2015, up to 15.00 Hrs

1.2 POINTS TO BE NOTED

1.2.1 Works envisaged under this contract are required to be completed in all respects within the period of completion mentioned above.

1.2.2 Applicant should be an Indian firm and fulfill the criteria set out in para 2.1 to 2.3 of Section II, Instructions to Tenderers (ITT).

1.2.3 This tender is to be submitted in two parts i.e. **TECHNICAL PACKAGE** and **FINANCIAL PACKAGE.** Technical Package shall be the Technical proposal for the work and Financial package the financial bid.

1.3 WORK CONTENT

1.3.1 Brief Scope

The project involves **Design, Construction, Supply, Erection, Testing & Commissioning of STP of 120 KLD capacity complete in all respects including all contingent Electrical, Mechanical, piping & instrumentation works and including operation & maintenance at IMHANS, Kozhikode**.

The work shall, inter-alia, include the following:

i. Design and engineer the STP to be operator friendly and for the operator's safety, health and hygiene.

ii. The tender is for turn-key job where it will be the responsibility of the contractor to hand over a completely functional unit complying with Central Public Health and Environmental Engineering Organisation (CPHEEO) Manual/Guidelines and PCB norms and with all necessary components

iii. Design & installation of all civil structures for the system.

iv. Getting the required approvals, permissions, NOC from the statutory / government agencies.

v. All aspects of quality assurance, including testing of equipment and other components of the work

vi. Project Management to ensure completion of Project as per timelines.

vii. Submission of Operators' Manual and training of personnel.

viii. Submission of the completion ('as-built') drawings and other related documents along with a soft copy any related software.

ix. Making good any defect during the Defects Liability Period

x. Providing Comprehensive Maintenance of the system for 8 years after the completion of 2 years Defect Liability Period.

1.3.2 Design criteria to be specified with the proposal by the Tenderer

The design of the Tenderer shall be of international standards and should be complete in all respects as per international best practices. Detailed design including the design criteria, codes and standards and specifications of the materials to be used for the design should be submitted by the Tenderer along with his proposal. Other documents as detailed in Employer's Requirements and Sub-clause 4.2.4 of Instruction to Tenderers should be submitted along with the design.

1.3.3 Reference to the Standard Codes of Practice

1.3.3.1 All Standards, Technical Specifications and Codes of practice referred to shall be latest editions including all applicable official amendments and revisions. The Contractor shall make available at site all relevant Indian Standard Codes of practice as applicable.

1.3.3.2 Wherever Indian Standards do not cover some particular aspects of design/ construction, relevant International Standards shall be referred to. The contractor shall make available at site such standard codes of practice.

1.3.3.3 In case of discrepancy among Standard codes of practice, Technical Specifications and provisions in Employer's Requirements, the order of precedence shall be as below:

i) Provision in General Requirements of Employer's Requirements
ii) Technical Specifications in Employer's Requirements,
iii) Standard Codes of Practice.

In case of discrepancy in reference to Standard Codes of Practice, the order of precedence shall be BIS, IRC, BS, ASTM, DIN

1.4 TENDER PRICES

a. Unless explicitly stated otherwise in the Tender Documents, the Contract shall be for the whole Work and payment shall be based on the milestones as accepted in the Contract.

b. The design notes, calculations, specifications, dimensioned drawings and milestone schedules prepared by the tenderer in respect of technically acceptable proposal shall be for limited purpose of prima facie evaluation for determining its technical acceptability, price and construction time.

c. Irrespective of the estimated quantities and /or dimensioned details for various items of work as furnished in the design notes, calculations, specifications or outline /dimensioned drawings accompanying the tender for the work, the successful tenderer shall carry out all changes, modifications or alterations that may, during the scrutiny of the detailed designs and working drawings, or during construction be considered necessary in the opinion of the Engineer for compliance with the Employer's Requirements.

d. The Tenderer shall include in his quoted price all taxes (VAT, Service Tax), fees and other levies, payable by the tenderer under the Contract.

The total service tax shall be quoted separately and shall be borne by the bidder. However if service tax exemption comes into force at a later date, the benefit shall be passed on to the client/HLL

1.4 SCHEDULE OF MILESTONES FOR PAYMENTS

S. N	Milestone	% of cost of the work
1	On completion of 50% civil works	25%
2	On completion of 100% civil works	25%
3	Supply of electrical, Mechanical & Piping works	15%
4	Successful Installation of electrical, Mechanical & Piping works	15%
5	Successful commissioning of the system and Training of institute staff	15%
6	After completion of defect liability period- (Security Deposit)	5%
	Total	**100%**

1.6 DOCUMENTS COMPRISING THE TENDER

TECHNICAL PACKAGE

1.6.1 The technical package, clearly labeled as "TECHNICAL PACKAGE", should contain technical proposal for the work

The proposal should cover in detail the following:

i. Understanding and comprehension of the work involved.

ii. Details of the System proposed

iii. The general approach and methodology proposed for carrying out the services covered in the Scope of Work, including such detailed information as deemed relevant. Apart from above, contractor shall give details and numbers of equipment including their source, to be mobilized for the project with an assurance that equipment mobilized would be able to conduct work as per specifications in stipulated time schedule.

iv. Detailed work plan, documents, data sheets mentioned in employers requirements, design of the plant containing the following

a) Construction Details

b) Equipment

c) Service Requirements

d) Standards and specifications being followed in the design and for materials to be used in a consolidated tabular form

e) Bill of Quantities (un-priced)

v. List of vendors from whom the materials and equipment are planned to be procured in a consolidated table.

vi. The details of the concept and technology to be used

vii. A program implementation schedule with broad list of activities, timelines and milestones (Hard and soft copy). Bar chart shall be made showing the activity to be performed for the project along with duration of each activity on a weekly basis.

viii. Proposed quality plan as per requirements of ISO: 9001:2008

1.6.2 No information relating to financial terms of services should be included in the Technical Proposal.

FINANCIAL PACKAGE

1.6.3 The financial package, clearly labeled as " FINANCIAL PACKAGE" will contain the following:

i. Financial Bid of the Tenderer as per Form C.

1.6.4 The financial proposal should be separately completed and submitted in a separate sealed envelope in the Format prescribed in Form C. The final prices shall be entered in the Form of Tender. These prices should include all costs associated with the contract**.**

1.6.5 Documents to be submitted by the Tenderer under technical and financial packages have been described under the respective Clauses 1.6. This list of documents has been prepared mainly for the convenience of the Tenderer and any omission on the part of IMHANS/HLL shall not absolve the Tenderer of his responsibility of going through the various clauses in the Tender Documents including the specifications and to submit all the details specifically called for (or implied) in those clauses.

1.6.6 All documents issued for the purposes of tendering as described in Clause 1.1, and any amendments issued shall be deemed as incorporated in the Tender.

1.7 TENDER PRICES

1.7.1 The Tenderer is required to quote for all the items as per tender documents. The Tenderer shall quote his price in Form-C (Format for Financial Bid). The total price quoted should be final and should be for undertaking the entire project in all respects as per the document.

1.7.2 Prices quoted by the Tenderer, will include all applicable tax liabilities (as per Union Budget 2015-16), applicable Labour Cess and the cost of insurance to this contract. There will be no variation in the Contract Price quoted by the Tenderer on any account.

1.7.3 The Tenderer shall keep the contents of his tender and rates quoted by him confidential.

1.7.4 The Tenderer shall utilize Indian labour, staff and materials to the maximum extent possible in execution of Works.

1.8 COST OF TENDERING

1.8.1 The Tenderer shall bear all costs associated with the preparation and submission of his tender and IMHANS/HLL will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the tendering process.

1.9 LANGUAGE OF TENDER

All tender documents shall be in English.

1.10 CURRENCY OF THE TENDER

Tender prices shall be quoted in Indian Rupees only.

1.11 TENDER VALIDITY AND EARNEST MONEY DEPOSIT

1.11.1 The tender shall remain valid and open for acceptance for a period of 120 days from the date of opening of the tenders.

1.11.2 In exceptional circumstances, prior to expiry of the original tender validity period, IMHANS may request the Tenderers for a specified extension in the period of validity. The request and the response thereto shall be made in writing or by Tele-fax. The Tenderer shall not be required or permitted to modify his tender but shall be required to extend the validity of his tender security correspondingly.

1.11.3 Earnest Money Deposit

1.11.4 The Tenderer shall furnish, as tender security, an amount as mentioned in Clause 1.1.2 of NIT.

1.11.5 Earnest Money of **Rs.50,000/-** along with the technical bid shall be submitted in the form of a Demand Draft of a scheduled bank issued in favour of HLL Lifecare Limited, Thiruvananthapuram which should be placed in a separate sealed cover marked "Earnest Money" shall be submitted along with the tenders. Any tender not accompanied by an acceptable tender security will be summarily rejected by the IMHANS/ HLL and shall be treated as non-responsive.

1.11.6 The tender securities of unsuccessful Tenderers shall be discharged/ returned by IMHANS/ HLL as promptly as possible but not later than 30 days after the expiration of the period of tender validity.

1.11.7 No interest will be payable by IMHANS/ HLL on the tender security amount cited above.

1.12 INCOME TAX CLEARANCE

The Tenderer shall provide income tax clearance certificate for the past five years in the technical bid.

1.13 POWER OF ATTORNEY

Power of Attorney duly notarized and on a stamp paper of an appropriate value, issued and signed by the member authorizing the person signing the tender documents to sign documents, make corrections/ modifications and interacting with IMHANS/HLL and acting as the contact person shall be submitted along with the technical bid.

1.14 FORMAT AND SIGNING OF TENDERS

1.14.1 The tender documents (technical package and financial package) shall be stamped and signed on all pages by a person duly authorized to sign the tender documents. The Tenderer shall also submit a power of attorney authorizing the person signing the documents.

1.14.2 Entries to be filled in by the Tenderer shall be typed or written in indelible ink.

1.14.3 The complete tender shall be without alterations, overwriting, interlineations or erasures except those to accord with instructions issued by IMHANS/HLL, or as necessary to correct errors made by the Tenderer. The person or persons signing the tender shall initial all amendments/corrections.

1.14.4 All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be written below their signatures.

2. SUBMISSION OF TENDERS

2.1 SEALING AND MARKING OF TENDERS

2.1.1 The Tenderer shall follow the procedure as indicated below:

2.1.2 Each tender will be submitted in two sets one marked "Original" and the other marked "Copy" (Copy should be photocopy of 'original').

2.1.3 Each set containing the two packages, TECHNICAL PACKAGE and FINANCIAL PACKAGE shall be sealed in two separate envelopes clearly marked as "Original". The two envelopes shall be wrapped in an outer envelope addressed to The Deputy Vice President (T), HLL Lifecare Limited, Infrastructure Development Division, "Adarsh", TC.6/1718 (1), Vettamukku, Thirumala P.O, Thiruvananthapuram – 695 006 duly super scribing on top, tender number, name of work and time and last date for submission. The envelope should also bear the name and address of the Tenderer.

2.1.4 The contents of Technical Package and Financial Package shall be as detailed under Clause 4.2 herein.

2.1.5 No responsibility will be accepted by the IMHANS/HLL for the misplacement or premature opening of a tender, not sealed or marked as per aforesaid instructions.

2.2 SUBMISSION OF TENDERS

2.2.1 Tenders should be submitted to:

The Deputy Vice President (T),

HLL Lifecare Limited,

Infrastructure Development Division,

"Adarsh", T.C 6/1718(1), Vettamukku,

Thirumala PO, Thiruvananthapuram- 695 006

The last date for submission of completed tenders is given in Clause 1.1.2 of NIT. The IMHANS/HLL may, at their discretion, extend this date for the submission of tender by amending the Tender Documents in accordance with Clause 3.3, in which case all rights and obligations of the IMHANS/HLL and the Tenderer previously subject to the original date shall thereafter be subject to the new deadline as extended. If such nominated date for submission of tender is subsequently declared as a Public Holiday, the next official working day shall be deemed as the date for submission of tender. Tenders shall be submitted by hand or through registered post or courier service at the address mentioned in Sub Clause 5.2.1. IMHANS/HLL shall not take any cognizance

and shall not be responsible for delay/loss in transit or non-submission of the tender in time. Tenders sent telegraphically or through other means of transmission (Tele-fax etc.), which cannot be delivered in a sealed envelope shall be treated as defective, invalid and shall stand rejected.

2.3 LATE TENDERS

Any tender received in Office of the **Deputy Vice President (T),** after the deadline prescribed for submission of tenders in Clause 1.1.2 of NIT herein will be returned unopened to the Tenderer.

3 TENDER OPENING AND EVALUATION

3.1 TENDER OPENING

3.1.1 The tender will be opened in the presence of Tenderers or their representatives who choose to attend on date & time as mentioned as per Clause 1.1.2 of NIT in the office of The Deputy Vice President (T), HLL Lifecare Limited, Infrastructure Development Division, "Adarsh", T.C 6/1718(1), Vettamukku, Thirumala PO, Thiruvananthapuram-695 006. If such nominated date for opening of Tender is subsequently declared as a Public Holiday, the next official working day shall be deemed as the date of opening of the tender. The Tender of any Tenderer who has not complied with one or more of the foregoing instructions may not be considered.

3.1.2 On opening of the main Tender envelopes, it will be checked if they contain Technical and Financial Packages.

3.1.3 Technical Package will thereafter be opened. They will be examined to see if they are complete, whether the requisite Tender security has been furnished, whether the documents are in order. If the documents do not meet the requirements of IMHANS the Tender Opening Authority will record a note accordingly and the said Tenderer's Financial Package will not be considered for further processing.

3.1.4 The Tenderers name, the presence or absence of the requisite tender security and such other details as IMHANS or his authorized representative, at his discretion, may consider appropriate will be announced at the time of tender opening.

3.1.5 The sealed financial packages of all responsive tenders will be opened on date and time to be fixed after the technical evaluation, when the lump sum prices quoted by the tenderers shall be read out.

3.2 PROCESS TO BE CONFIDENTIAL

3.2.1 Except the public opening of Tenders, information relating to the examination, clarification, evaluation and comparison of tenders and recommendations concerning the award of Contract shall not be disclosed to Tenderers or other persons not officially concerned with such process.

3.2.2 Any effort by a Tenderer to influence IMHANS/HLL in the process of examination, clarification, evaluation and comparison of tenders and in decisions concerning award of contract, may result in the rejection of the Tenderer's tender.

3.3 CLARIFICATION OF TENDERS

3.3.1 Technical evaluation of technical packages submitted by Tenderers shall be undertaken based on details submitted in the technical package only. No clarification/additional information in this regard will be sought from Tenderers. Tenderer shall not be required to submit their own, additional information or material subsequent to the date of submission and such material if submitted will be disregarded. It is therefore essential that all the details are submitted by Tenderer accurately and specifically in their technical package avoiding vague answers. However, IMHANS/HLL reserves the right to ask any clarification from Tenderers for details submitted with technical package if it so desires during the technical evaluation.

3.4 To assist in the examination, evaluation and comparison of Financial package, IMHANS/HLL may ask Tenderers individually for clarification of their tenders, including breakdowns of prices. The request for clarification and the response shall be in writing or by Tele-fax but no change in the price or substance of the tender shall be sought, offered or permitted except as required to confirm correction of arithmetical errors discovered by the Officer-in-Charge during the evaluation of tenders

3.5 DETERMINATION OF RESPONSIVENESS

3.5.1 Prior to the detailed evaluation of tenders, IMHANS/HLL will determine whether each tender is responsive to the employer's requirements (Technical Package) of the tender documents

EVALUATION OF TENDER

3.5.2 (a) The Tenderers should submit the details as per requirements and should meet the minimum requirements as per technical package.

(b) HLL will, carry out technical assessment of submitted technical proposals to determine that the Tenderer has a full comprehension of the work of the contract. In case the Tenderer's technical submittal is found non-complaint with the requirements of the project the same is liable to be rejected. This process is to assure that only technically acceptable proposals are considered for the work.

3.5.3 The evaluation of Financial proposals by IMHANS/HLL will take into account, in addition to the tender amounts, the following factors:

a. IMHANS/ HLL for any arithmetical errors in computation and summation will check tenders determined to be technically acceptable during Financial evaluation. Errors will be corrected by the IMHANS/HLL as follows: **Where there is a discrepancy between amounts in figures and in words, the amount in words will govern.**

If a Tenderer does not accept the correction of errors as outlined above, his tender will be rejected and the tender security forfeited.

b. Such other factors of administrative nature as IMHANS/HLL may consider to have a potentially significant impact on contract execution, price and payments, including the effect of items or rates that are unbalanced or unrealistically priced.

3.5.4 Offers, deviations and other factors, which are in excess of the requirements of the tender documents or otherwise and will result in the accrual of unsolicited benefits to IMHANS, shall not be taken into account in tender evaluation.

3.5.5 Price adjustment provisions applicable during the period of execution of the contract shall not be taken into account in tender evaluation.

3.5.6 Evaluation of financial offer will be based on price quoted by the Contractor. Any subsequent alteration in prices shall not be given any cognizance.

4 AWARD OF CONTRACT

4.1 AWARD CRITERIA

4.1.1 IMHANS/HLL will award, the Contract to the Tenderer, whose tender has been determined to be substantially responsive, complete and in accordance with the tender documents, and whose total evaluated price for undertaking the entire project detailed in Scope of work and Employer's Requirements of the Document is the lowest.

4.1.2 If the financial bids of both parties are equal, then the bidders shall be asked to resubmit the financial bid.

4.2 EMPLOYER'S RIGHT TO ACCEPT ANY TENDER AND TO REJECT ANY OR ALL TENDERS

4.3 NOTIFICATION OF AWARD

4.3.1 Prior to the expiry of the period of tender validity prescribed by the IMHANS/HLL, HLL will notify the successful Tenderer by Tele-fax or e-mail, to be confirmed in writing by registered post/ by courier, that his tender has been accepted. This letter (hereinafter and in the Conditions of Contract called 'the Letter of Acceptance') shall name the sum which IMHANS will pay to the Contractor in consideration of the execution, completion, maintenance and guarantee of the works by the Contractor as prescribed by the Contract (hereinafter and in the conditions of Contract called 'the Contract Price'). The Letter of Acceptance will be sent to the successful tenderer. No correspondence will be entertained by IMHANS/ HLL from the unsuccessful Tenderers.

4.3.2 The Letter of Acceptance shall constitute a part of the contract.

4.3.3 Upon submission of Performance Security by the successful Tenderer as per clause 8.0, IMHANS/HLL will promptly notify the unsuccessful Tenderers and discharge / return their tender securities.

4.4 SIGNING OF AGREEMENT

4.4.1 IMHANS/HLL shall prepare the Agreement in the Proforma (Form E) included in this Document, duly incorporating all the terms of agreement between the two parties. Within 30 days from the date of issue of the Letter of Acceptance the successful Tenderer will be required to execute the Contract agreement. The performance guarantee should be submitted immediately after issue of letter of acceptance but not later than 30 days of issue of letter of acceptance. One copy of the Agreement duly signed by IMHANS/HLL and the Contractor through their authorized signatories will be supplied by IMHANS/HLL to the Contractor.

4.4.2 Prior to signing of the Contract Agreement, the successful Tenderer shall submit Performance Security within a period of 30 days from the date of issue of the Letter of Acceptance:

2 ELIGIBLE APPLICANTS AND ELIGIBILITY CRITERIA

2.1 The intending bidders should have satisfactorily set up on Turnkey basis STPs /ETPs based on any advanced technology except waste stabilization/oxidation pond during the last 7 (Seven) years ending last day of the month of **March 2015** according to any one of the following requirements.

a) Three systems of 50 KLD capacity each
b) Two systems 75 KLD capacity each or
c) One system of 100 KLD capacity.

2.2 The average annual turnover of the firm should not be less than Rs. 8 Lakhs in the last three consecutive financial years ending March 31, 2014. The Firm should be profit making during each of the last three financial years, ending March 31, 2014.

2.3 All tenders submitted shall include the following information:

General information of the Tenderer shall be furnished in Form T-I. Copies of original documents defining the constitution and legal status, certificate of registration and ownership, principal place of business of the company, corporation, firm or partnership shall also be required to be furnished.

2.4 The Tenderers to qualify for award of Contract shall submit a written power of attorney authorizing the signatory(ies) of the tender to commit the Tenderer.

2.5 The authorized signatory of the Tenderer shall sign each page of tender. Power of Attorney in favour of the signatory will be required to be furnished as detailed in Clause 4.10

2.6 Cancellation or creation of a document such as Power of Attorney, Partnership deed, Constitution of firm etc., which may have bearing on the Tender/Contract shall be communicated forthwith in writing by the Tenderer to HLL LIFECARE LTD

2.7 Each Tenderer, or any associate will be required to confirm and declare in the tender submittal that no agent, middleman or any intermediary has been, or will be, engaged to provide any services, or any other items of work related to the award and performance of this contract. They will have to further confirm and declare in the

submittal that no agency commission or any payment, which may be construed as an agency commission, has been, or will be paid and that tender price will not include any such amount.

2.8 Applicants shall not have a conflict of interest. All applicants found to have a conflict of interest in this prequalification process shall be disqualified. Applicants shall be considered to have a conflict of interest if:

a. Applicants in two different applications have controlling shareholders in common or
b. Submit more than one application in this prequalification process
c. Applicant has participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of this prequalification

3. CORRUPT OR FRAUDULENT PRACTICES

a. HLL requires that Applicants/Suppliers/Contractors under this contract, observe the highest standard of ethics during the procurement and execution of this contract. In pursuance of this policy, HLL

(a) Defines, for the purpose of these provisions, the terms set forth below as follows:
   i. "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
   ii. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Applicants (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

(b) Will reject a proposal for award of work if it is determined that the Applicant recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

(c) Will declare a Applicant ineligible, either indefinitely or for a stated period of time, to be awarded a contract/ contracts, if it at any time determines that the Applicant/Bidder has engaged in corrupt or fraudulent practices in competing for, or in executing the contract.

8.0 EMPLOYER'S RIGHT TO ACCEPT AND TO REJECT ANY OR ALL APPLICATIONS.

8.1 The employer reserves the right, without being liable for any damages or obligation to inform the applicant, to:

A. Amend the scope and value of contract to the applicant.
B. Reject any or all of the applications without assigning any reason.

8.2 Any effort on the part of the applicant or his agent to exercise influence or to pressurize the employer would result in rejection of his application. Canvassing of any kind is strictly prohibited.

9.0 JURISDICTION

All disputes arising shall be subject to the jurisdiction of the appropriate court at Thiruvananthapuram, India and will be governed by the laws of India.

10. APPLICANT'S RESPONSIBILITY

a. While submitting the Application the Applicant would submit a certification that it has:
   - Made a complete and careful examination of requirements and other information set forth in this Document
   - Made a complete and careful examination of the various aspects of the Project including but not limited to:
     - The Project site
     - Existing facilities and structures
     - The conditions of the access roads and utilities in the vicinity of the Project Site
     - Conditions affecting transportation, access, disposal, handling and storage of the materials
     - Clearances required for the Project and
     - All other matters that might affect the Bidder's performance during the Construction and Operation of the Project if awarded

b. HLL shall not be liable for any mistake or error or neglect by the Applicant in respect of the above.

SECTION II

PROJECT DETAILS AND SCOPE OF WORK

The tender is invited **on turnkey basis** for Design, Engineering, Supply, Coordinating with construction works, Erection and Commissioning of Sewage Treatment Plant (STP) **of 120 KLD capacity at IMHANS**,Kozhikode.

The main source of effluent is wastewater resulting from Toilets, pantries, and washrooms. The scope of work includes detail design, drawings, getting approvals from statutory bodies, coordinating during construction, erection, commissioning and obtaining best results for completely below ground domestic sewage treatment plant with electrical, mechanical and piping. **(Treatment of Kitchen waste is not included in this scope of work)**

The treated effluent should be fit to reuse for gardening, HVAC and Flushing Disposal purpose.

The work should be carried out on a turnkey basis covering a performance guarantee of plant as per the standards committed for minimum of **Ten years.**

Vendor will have to submit detail design, hydraulics, plan and section with detail equipment specs along with TENDER justifying each parameters on qualification of the document. Also vendor to submit pay back calculation, operation and maintenance cost sheet.

Employers's Requirments

TECHNICAL SPECIFICATION
FOR DOMESTIC SEWAGE TREATMENT PLANT – 120 KLD

Section A- DOMESTIC SEWAGE TREATMENT PLANT

1.1 GENERAL

The main source of effluent is wastewater resulting from Toilets, pantries, and washrooms. The scope of work includes detail design, drawings, getting approvals from statutory bodies, coordinating during construction, erection, commissioning and obtaining best results for completely below ground domestic sewage treatment plant with electrical, mechanical and piping. **(Treatment of Kitchen waste is not included in this scope of work)**

The treated effluent should be fit to reuse for gardening and Flushing Disposal purpose.

The work should be carried out on a turnkey basis covering a Defect Liability period of 2 years and the contractor should provide comprehensive maintenance for the system for a period of 8 years. The scope of work for the contractor also includes taking all necessary statutory approvals from all concerned authorities and bodies for the successful installation and commissioning of the plant. The bidder should quote for Design, Construction, Supply, Erection, Testing & Commissioning of STP of 120 KLD capacity complete in all respects including all contingent Electrical, Mechanical, piping & instrumentation works and including operation & maintenance at IMHANS, Kozhikode in the financial bid format (Form C) attached. The bidder will not be paid any extra for any deviations.

TURNKEY TENDER

Vendor to submit detail design, hydraulics, unpriced BOQ, plan and section with detail equipment specs along with TENDER justifying each

parameters. Also vendor to submit pay back calculation, operation and maintenance cost sheet.

1.2 BASIC DATA ON RAW WASTE WATER (SEWAGE)

Total Suspended Solids (TSS) : 300 mg/lit

BOD 5 days : 300 - 400 mg/lit

COD : 500 – 600 mg/lt

pH : 4– 13

Peak Factor : 2.5

Inflow Time : 18 Hrs

1.6 SCOPE OF CONTRACT & DESCRIPTION OF WORK SCOPE OF CONTRACT

The tender is invited on turnkey basis for Design, Engg, Supply, Co-ordinating with construction works, Erection and Commissioning of Sewage Treatment Plant (STP to give treated effluent quality as specified.

The successful contractor will be required to submit the Detailed Process & Structural drawings (shop drawings) incorporating the thickness of various structural members.

These detailed drawings shall be submitted to Consultants for their comments & approval. Vendor has to submit all the technical details for equipments used for operation of plant to the consultant and should get approval. All the works shall be carried out as per final "valid for construction drawings" only.

- Testing of all equipments at his workshop shall be certified from Consultant.
- Inspection visit to certify all the equipments before supply shall be arranged for Consultant/PMC.
- Complete interconnecting piping between various units as per piping details including supply of all materials like GI pipes, fittings, all valves, gaskets, flanges, nuts and bolts including all materials required for necessary pipe supports, etc., complete.
- Supply, erection and commissioning of all the equipments required for the sewage treatment plant as per the individual equipment specification.

- All electrical works including all electrical motors for the various equipment confirming to IS 5600 - 1970, cabling, LT panel, starters, etc.,
- The scope of work includes coordinating all necessary civil works like construction of panel foundations, cable trenches, cable supports, lighting of entire plant as per drawing etc., complete.
- Commissioning of all the equipment after the electricity is supplied will be within the scope of contract.
- All temporary sheds, office, go downs, etc. required for storage of materials and for contractors supervisory personnel at site.
- Vendor to submit detail cost sheet for operation and maintenance, inclusive of all consumables, man power and electrical power charges for 8 years after DLP along with tender.
- Vendor to submit the pay back calculation sheet for above technology with Civil, M&E costs including O&M charges.

1.7 DETAILS OF CIVIL WORKS

Civil works carried out in the treatment plant are as below which should be done by the vendor.

a. Coarse Bar Screen Chamber
b. Fine screen
c. Equalization Tank
d. Anoxic/Aeration / MBR Tank
e. Final tank
f. Working platform, staircase etc., as per drawing
g. Works such as pipe / cable trenches, chambers, equipment foundations, staircase headroom at entry of STP etc.
h. Plant room.
i. Sludge holding tank.

1.8 GENERAL

The scope of work regarding Civil Works also includes coordinating necessary hydraulic testing for water tightness/seepage as per relevant IS CODES FOR ALL WATER RETAINING STRUCTURES and hydraulic levels of the units done by contractor.

Scope of contract for piping includes construction of necessary masonry valve chambers min 900 x 900 wherever necessary, removable type MS painted covers and extension spindles for valves.
Make of all piping/Equipments/Motors/Cables and Pumps shall be clearly stated in the offer and shall be approved by Consultant before Supply & Installation. The decision of Consultant in this regard shall be final and binding on the successful Contractor.

All equipment GA drawings shall be submitted to Consultant for approval prior to fabrication/ ordering. The fabricated and brought-out equipments shall be inspected at Contractor Works by Consultant and shall be dispatched to site only after obtaining clear dispatch instructions in writing from Consultant.

It is obligatory on the part of the intending bidder to visit the site of work prior to submitting the offer and familiarize himself with local/site /soil conditions, availability of men, Materials and Machinery for successful and timely execution of the works. No extra shall be paid in case Contractor fails to ascertain correct site conditions before submitting the offer.

All MS hand railing/ladders shall be given two coats of corrosive resistant paint over a coat of red-oxide primer or approved make and shade, which shall be scope of civil contractor.

Any other item not specifically mentioned in this tender but is essential for proper and successful completion, commissioning and running of the DSTP for its commercial utilization is also to be included in the scope of contract.

Fresh water line shall be provided to STP area but should be coordinated with plumbing vendor.

"STP vendor has to coordinate with Main contractor, Plumbing vendor, Electrical contractor, Project management/Builder/Client, Architect and Consultant to establish the plant and to run the plant successfully".

Battery Limits:

1. Sewage Inlet up to STP screen chamber
2. Treated water up to final sump in the STP
3. Exhaust fan capacity and ducting up to terrace
4. Electrical feeder up to LT panel.
5. Fresh water line up to STP.

Project At A Glance

i) STP 120 KLD

1) This plant is designed to work on up-flow technology that is each tank volume is designed on the basics of retention time required to come up a layer of water from the bottom part of the tank to the over flow channel at the top away from the water fall into the bottom of the next tank for further process and operation.
2) The plant is designed in such a way that first the raw sewage pumped directly into the overhead tank. Whose bottom is 1M to 1.5M above from the top of the remaining tanks. So the water flows from overhead tank to the other tanks simply on gravity force, minimizing the consumption or use of electricity or other source of energy in any process operation.
3) Pump is required only for :
   i) Lifting the sewage water to over head tank.
   ii) For filtering the treated water from the pre filtration tank PSF & ASF.
   iii) For sludge recycling / removing from primary and secondary clarifier.
   iv) Very less man power required just for supervising the whole process, because all pumping operation are automatic by use of float switch.

SPECIAL ADVANTAGES

1. Highly energy efficient

This plant shall work at optimum energy efficiency at all loads.

2. Gravity flow (with no full time operator)

The plant shall work on the principles of gravity flow, so that no plant operator is

required for any transfer operation from one process to another. Operation is required for the over all supervision.\

3. ***Least space is required compare to conventional plant***

The design should be compact requiring lesser foot print.

4. ***Technology***

The plant should work on the principle of Anaerobic followed by aerobic activated sludge process by using SAFF/MBBR technology producing the least sludge which is highly rich with bacteria and recycled to aeration tank.

5. ***Least maintenance***

The plant should have least maintains is required as there is not much use of electrical, mechanical, electronic
equipments

6. ***Least recurring cost***

Recurring cost and consumables should be kept minimum.

7. ***Continuous operation***

The plant shall be capable of round the clock work even without the presence of an operator.

TECHNOLOGY

The following is indicative only and the bidder can quote for deviation in the technology provided it gives better results.

The proposed S T P designed to function on **"Anaerobic followed by Aerobic activated sludge process**, a 3 stage operation say, primary, secondary and tertiary treatments incorporated with SAF technology (Submerged Anaerobic Fixed Film Reactor) " The term, activated refers to a biological process for treating waste water. Here a particular type of micro organisms (bacteria) are cultured and maintains in the treatment basin which eat up the bio mass and converted into simple inorganic materials like CO_2 and H_2O in aerobic as well as an-aerobic conditions in separate reactors, inorder to increase the an-aerobic growth and thereby reducing the maximum bio-load. So that the BOD and COD reduction in this stage is maximum in order to conform the remaining BOD removal the water is again treated in aerobic reactor with continuous supply of oxygen through fine bubble diffuser membrane kept at the bottom the reactor. The air is blowed into it by using a positive displacement twin lobed root air blower. Here the BOD and COD reduction become complete.

Organics + Bacteria --> CO_2 + H_2O + L.M.Organics + Bacteria

THE PROCESS SHALL INCORPORATE

- Removal of bigger objects, debris and other particle by **bar screen.**
- Law density physical separation for the removal of **Oil, Grease trap.**
- High density physical separation by **Grit chamber.**
- Diffused air floatation **(DAF)**
- PH correction**(Neutralization)**
- Gravity settling for solid liquid separation. **(primary clarifier)**
- Making the sewage and sullage homogeneous in concentration **(equalization)**
- **An-aerobic operation** incorporation with SAFF (Submerged an-aerobic Fixed Film Reactor) for BOD COD reduction.
- **Aerobic reaction** with the calculated supply of Oxygen for BOD COD and turbidity reduction incorporated with M.B.B.R..
- **Flash Mixture** for mixing of coagulant /flocculant.
- Settling of sludge / floc **(secondary clarifier)**
- Treated water collection in an intermediate tank**(pre filtration)**
- Filtration for removing the turbidity **(sand filter)**
- Decolurisation and de odourisation by Adsorption **(carbon filter)**
- Dis-infection by **UV/chlorinator.**
- Controlling systems by using Electrical panel Control Board.

WATER BUDJET

The bidder should indicate the following

Description	Quantity	Average Consumption per unit	Total
Total number of Beds			
Spare Capacity for peak hour requirement			

Total approximate qty per day			120000
Required plant capacity			**120 kld**

DESIGN BASIS

Parameter	**Unit**	**Influent characteristic**	**Effluent characteristic after treatment**	**KSPCB Standard**
PH	-	4 to 13	7 to 8	6.5 to 9
TSS	mg/ Ltr	300 to 400	<10	< 20
BOD	mg/ Ltr	300 to 400	<3	< 3
COD	mg/ Ltr	500 to 600	<100	< 250
Oil and Grease	mg/ Ltr	20 to 30	<5	< 10

HYDRO DYNAMICS

The plant shall be designed to work on continuous flow basis by gravity. The volume of each tank of the plant is designed to maintain the retention time required by the effluent in each tank during its up flow operation by maintaining the input velocity of the effluent as a constant.

PROCESS DESCRIPTION

I. PRIMARY TREATMENT

1.Bar screen for Sewage

The primary use of this unit is to remove any kinds of debris, large objects and solid substance etc that may interfere in the subsequent unit operations. Suitable Box type of screen made of MS frame with mesh of 3.5mm size which can be removed and cleaned periodically. The indicative size of the screen is 1mX1mX1m

2 .Grit chamber

The primary function of the grit chamber is to remove any soil grit or heavy materials which may come along with influent. Grit chamber is a two compartmental chamber with standing pit at bottom to accumulate the grit or soil which can be manually remove periodically. The indicated size shall be 1mX1mX1m

3.Oil and Grease Trap

OIl and grease trap shall be specially designed for compartmental chamber with removable lid. The oil, grease, fat or any low density material which may come along with the influent and may interfere in subsequent process operation is to be removed in this stage. Low density float on the surface of the influent which can be trapped by using properly designed flap trap. The size of the oil and grease trap is 2.5x1x1.

4.Sewage and Sullage Collection

The entire sewage shall be collected in a separate collection tank of suitable capacity below ground with RCC . this sewage can be then pumped in to the over head collection tank for blending or equalize with treated sullage at the stage of equalization. Sullage, the wash water from the bathrooms, wash basins, kitchen etc. of the establishments are collected in a sullage collection tank of required dimension of RCC tank after passing through a scientifically designed Bar screen, grit chamber followed by oil and grease trap through proper and scientific way of plumping arrangement. A self priming mono block pump of suitable capacity shall be kept for the pumping of this sullage to the over head collection tank for further process of blending operation with sewage in equalization by gravity flow.

4. **DAF (diffused air flotation)**

Here the water from the over head collection tank flows into the bottom part of the diffused air flotation chamber which is specially designed to remove the slow density materials like fat, oil, stains etc.. Diffused air is passes through the effluent from the bottom part of the chamber through fine bubble diffuser membrane. Due to the reduced pressure, a large no: of bubble is produced which rises very slowly to the surface of the tank during the travel from bottom to top small and low density suspended particles stick on the bubbles and come at the surface producing the scum which is pushed into the scum receiver where the water is sprayed to break down the bubbles along with the solid suspended particles and flow down to oil and grease trap the air to water ratio is maintained to 0.15 – 1 approximately 50 % of solid suspended particles 80% of FOG are removed by this process.

5. Precipitation Tank/Neutralization

The water from the over head collection tank is arranged to flow by gravity into the bottom of the precipitation tank at a constant velocity by controlling the control valve. The sullage water may contain soap, detergents, higher fatty acid materials, salt and chemicals etc. The dosing of neutralization chemicals can be done at this stage, so as to required PH can be obtained. The agitation due to the diffused air enhances the reaction of neutralization uniformly. The precipitation process also can be done with in DAF where diffused air is passed from the bottom produces the form which carry all low density particles, fats and colloidal suspension at the top as scum which can be remove simultaneously.

6. PRIMARY CLARIFIER/SETTING TANK

Here the water after precipitation is transferred in to the bottom of a properly designed hopper bottom clarifier by gravity flow. A retention time of 4 hrs minimum is given here for the gravity settling the precipitated salts or other solid substances. The hopper bottom part of the clarifier help the effective settling of the solid through a small volume and sludge can be pumped in to sludge drying bed by using a sludge pump. The clear water without solid suspended particles or inorganic materials are over flow through over flow channels kept at the top portion of the clarifier with stoppers. which will pass on through channels into the next equalization chambers.

7. EQUALIATION TANK /PRE-AERATION TANK

Here effluent from the primary clarifier will come into the bottom part of the equalization chamber where coarse bubble diffuser membranes are systematically arranged in the bottom part of tank through proper piping arrangements and foundations. An air of 8 m3/hr is blower through the coarse bubble diffuser membrane by using Twin-Tri lobe root air blower and using proper valves arrangements. So that the effluent will be equalized the sewage from sewage collection tank can be added at this stage. The equalization will give a homo genius composition and equal Bio load at each and every part of the raw effluent.

II SECONDARY TREATEMENT OPERATION **(Biological process)**

1. ANAEROBIC TANK

Here the water from the Equalization chamber flow into the bottom part of the an-aerobic rector by gravity. The anaerobic tank here is filled with high surface area bio-dek packing materials with honey comp structure and having a specific surface area of 157m2/m3 for the attached growth of bacteria in anaerobic condition. This ensure high anaerobic microbial growth and anaerobic microbial biomass reduction from the initial organic load in effluent a retention time of 10.7 hrs for the effective reduction of bio load. A BOD reduction 40% TO 50% expected in this stage.

2. AERATION TANK

The effluent from anaerobic reactor is now transferred in to the bottom part of the aerobic reactor by overflow method. The aerobic reactor, where the fine bubble diffuser membranes are kept the bottom of the aeration tank as per suitable design and through proper piping and foundation arrangement. Here aerobic bacterial growth is become maximum in suspension condition due to the availability of the sufficient oxygen from the diffused air from the route air blower. Aerobic bacteria attain the highest growth rate and eaten up maximum bio-degradable sludge and thereby reducing organic load in the effluent water. An air blower of approx: 220m^3 capacity and air pressure of 0.4 Kg is used to give sufficient supply of air. High quality diffuser membrane of cylindrical type ensures the uniform permeability and the circulation of the air with in the aeration rector. It produce a fine flow of air bubbles in each and every corner of the tank without giving a chance for anaerobic condition even in the corners. The non – clogging nature of the specially designed diffuser ensures maximum oxygen transfer. Re-circulation of bio sludge (MLSS) from clarifier/settling tank to the aeration tank ensures very high reduction of organic load and reduction of BOD from to less than 5-10mg /l. (considering only 90%efficiency of the plant) retention time of this aeration tank shall be not less than 8hrs.

III. TERTIARY TREATMENT

1. FLASH MIXER

Treated water from the aeration basin is over flowed into the bottom part of the flash mixer were selected course bubble diffuser membrane are kept at uniform distance with proper distance and piping arrangements. A airflow of 8 m3/ hr is blown from the twin lobe root air blower to agitate and mix the treated water due to the agitation electro static charges on the solid suspended particles which may assist in coagulation/myscle formation in fourth coming stage of secondary clarifier operation. A dosage of poly electrolyte in this stage may increase the sedimentation/ flocculation more effectively and to achieve more clarity in the treated effluent.

2. SECONDARY CLARIFIER/Tubular clarifer

Here the aerated water is then transferred in to the bottom part of properly designed hopper bottom secondary clarifier by over flow method and retention time of not less than 6 to 8 hrs minimum is given here. So that an activated bio sludge and pealed of bio-mass and any other solid particles are settled by gravity settling process. The hopper bottom part of the clarifier help the effective settling of the solid through a small volume and this activated sludge can be recycled in to the aeration tank. Tubular packing at an angle of 45 degree have kept at the top portion of the conical part for the siphoning of the clear water from the secondary clarifier to the pre-filtration tank. A sludge recycling pump is kept to recycle the sludge from the pit of the secondary clarifier to aeration tank which is highly rich with bacteria required for the bio degradation in aerobic reactor.

3. PRE FILTRATION

The clear over flow from the secondary clarifier is collected in a pre filtration tank of suitable capacity it is an intermediate collection tank here the treated water is then added with 1-2PPM of chlorine/Sodium hypo chloraite for the disinfection purpose retention time of 6-7 hrs can be given here before pumping into the PSF and ACF for the filtration and adsorption. Here UV can also be used for disinfection which may avoid the bigger recurring cost and production of by product as chlorate

4.PRESSURE FILTER

A pressure filter of suitable size is made of MS/FRP wave cyber vessel filled with selected media of filtration in order to filter out the suspended particle of the treated water. Here pebbles/sylax of various mesh size are arranged in various layer so as to get the affective filtration. Particle up to the size of 100 micron is filtered in this stage. The vessel is having top and bottom opening with multi port valve/brass valve for easy handling of filter, backwash and rinse operation.

5.ACTIVATED CARBON CHAMBER

A pressure filter of 600 mm dia and 1650mm height made of FRP wave cyber vessel filled with activated carbon of 900 iodine value and 8x32 mesh size shall be provided to absorb all dissolved gases colour pigments and other phrases of unwanted compounds. The vessel is having top and bottom opening with multiport valve for easy handling of filter, backwash and rinse operation.

6.COLLECTION AND DISTRIBUTION

Product water from after disinfection and filtration can be collected in tank in suitable capacity and used for flushing of toilets or for gardening and agricultural purpose

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CHEMICAL DOSAGE

Dosing of chemicals or chemical dosing in different stages of process operation.
1. The sullage is to be dozed with proper chemical like lime or HCL for the precipitation of the unwanted organic and inorganic component. If Acidity of sullage is higher which can be dosed with lime water and if the alkalinity is higher which can be dosed with HCL. The quantity is depend upon acidity and alkalinity level of the sullage The PH of the water can be set to 6.5 to 8.5 in this stage by addition of suitable acid/alkali depend up on the nature of sullage.

2. A dosage of 2 ppm of chlorine should be given after the filteration to remove all micro organisms like bacteria in the product water from the plant.

3. Poly Electrolyte dosing:
A calculated quantity of poly electrolyte is advisable in the flash tank for the miscle formation or flocculation. The poly electrolyte will flocculate the small suspended particle and may be settle down in the secondary clarifier by gravity settling operation.

SLUDGE DEWATERING

The sludge may be generated in the bottom pits of the primary and secondary clarifier. The sludge from the primary clarifier mainly or precipitated fatty acid, Minerals and organic substance which may not be useful for subsequent unit operation can be pumped in to a sludge drying bed. Here beds of pebbles and sand is kept at the bottom part of the tank with suitable drain out. The solids suspended particle in the sludge will remain on the top of the bed and water may percolated through the bed and come out of the drain line and can be recycled into the collection tank for recycling. The sludge from the secondary clarifier is mainly due to excess bio-mass synthesized due to organic load in the waste water and may rich with disintegrating bacteria. This sludge may called as activated sludge can be recycled to the aeration tank for the further reaction or can be pumped in to gravity sludge dewatering beds or sludge drying bed as mentioned above.

PANEL BOARD

The entire plant is operated by using a properly designed electrical control panel board with pus h button switches, necessary meters, circuit breakers, contactors, connecters etc... for the

efficient protection of the electrical equipment like blowers pumps etc... from fluctuation of voltages/current high-tech devises with buss bar and perfect panel wiring give efficient results in control operations.

SPECIFICATION OF ELECTRO MECHANICAL EQUIPMENTS

SL.No	EQUIPMENT	QUANTITY	SPECIFICATION
1	Bar Screen	1 Nos	Size-1mX1mX1m, Frame size-40x40x8angles inside with -20x20x5MS flats
2	Sewage feed Pump	2 Nos	3 phase monoblock self priming pump,1 HP capacity
3	Sludge recycling pump	2 Nos	3 phase monoblock self priming pump,1HP capacity
4	Root Air Blower	2 Nos	AirCapacity: 220m^3/hrs0.4Kg pressure,6-7 HP motor rating
5	Filter feed pump	2 Nos	3 phase monoblock self priming pump,1HP capacity
6	Coarse bubble diffuser membrane	20- 25 Nos	Disc type EPDM material
7	Fine bubble diffuser membrane	15-20 Nos	Long type EPDM material
8	Bio-Dek packing media (SAFF)	A lot	Honey Comb Structure. Tube Type
9	MBBR	A lot	Wheel type made of pp spcicific gravity 0.9 sarface area 475m^2/m^3
10	Electrical Panel Board	1 Nos	Components/ parts used in the panel board is either of Siemens/ C&F make

11	Pressure sand filter	1 Nos	Suitable capacity, FRP wave cyber vessel 600 mm Dia, 1650 height with 60nb multi port valve
12	Activated carbon filter	1 Nos	Suitable capacity, made of MS with FRP lining inside and epoxy coating outside followed by CR coating to UV absoption with top & botton flanges. wave cyber vessel 600 mm Dia, 1650 height with 60nb multi port valve. filled with activated carbon of 1100 loading value.
13	Chlorinator/ Dosing pump	1 Nos	3 -5 litres/Hr
14	Flocculating agent dosing	1 Nos	5 litres / Hr

The makes shall be as approved by the Engineer-in-charge.

Turnkey Civil Works

The bidder shall carry out all civil works required for the plant including tanks, foundations, supports, drains, facility for sludge removal and design & drawings for the same shall be in the scope of the bidder.The client/HLL will provide only the space and utilities at the battery limit.

1.12 TEST/TRIAL RUNNING AND COMMISSIONING

The Contractor shall have to test the each equipment used for the plant for at least 72 hours continuous running with designed load and to the full satisfaction of Consultants. Any defects found, has to be rectified by the contractor at his own cost immediately and within reasonable time to be decided by client.

Necessary Instruments, Gauges, Labour/Supervisory Staff, Laboratory analysis etc., are to be furnished/provided by the vendor at free of cost to client.

Contractor has to specify the value added services in his offer letter.

It is necessary for vendor to specify the minimum wastewater required for commissioning of STP with TENDER.

1.13 COMMISSIONING/ HANDING OVER

During trial runs as described above, the Contractor shall satisfy Consultant in all respects regarding the satisfactory quality of effluent, quality of materials, equipments and workmanship used in the plant.

Only after satisfying itself/ himself regarding the above points, client will take over the plant and such date of taking over shall be deemed as date of completion for all purposes, guarantees, and payment terms mentioned else where in this tender.

The guarantee period described elsewhere in the tender should start from the date of completion.

1.14 TRAINING OF OPERATOR

Contractor shall provide necessary training for operator during commissioning period. Vendor to certify the operator performance to carry over the plant maintenance and operation efficiently after handing over the plant.

1.15 GUARANTEE

The under mentioned clauses shall govern in case of any contrary provisions given elsewhere in the document.

Manufacturer's Guarantees

The manufacturer’s guarantee for design, workmanship, and performance for all bought out items shall be made available to the owner and shall be valid at least for the entire defects liability period.

In the event of failure of any particular equipment, which fails more than three items during the guarantee period as mentioned in clause below, the contractor shall replace at his own cost that equipment. Manufacturer's/Contractor's guarantee, as mentioned in clause above, for such replaced equipment shall also be made available to the Owner and should be kept at least for one year from the date of last replacement.

Performance Guarantee

The Contractor shall give guarantee for a period of **two years (Defect Liability Period)** from the date of successful commissioning of the treatment plant against design, defective materials, workmanship, performance and guaranteed effluent

quality. In the event the commissioning of the plant is not possible due to non-availability of effluent, contractor shall be issued mechanical completion certificate by client/consultant provided each equipment is tested satisfactorily as directed by Consultant. However, the contractor shall have to maintain the plant at his own cost, in such a case for a period for three months beyond which period, if he is required to maintain further, he will be paid extra at mutually agreeable rate. However, the Contractor shall carry out testing and commissioning of the plant during the Defects Liability Period. Any defects found in the workmanship, the Contractor at his own expense shall make materials or performance of the plant good within the time specified by client/consultant.

For this purpose, the retention amount will be as follows:

10% of each RA bill until it reaches 5% of the total value of Contract shall be retained and also treated as security deposit. The security deposit shall be retained till for a period of 60 days after the completion of defects liability period as stated above. This amount can be released against the bank guarantee for equal amount for the purpose to be submitted by the contractor. The contractor at his own expense shall start and commission, the plant and prove that it is giving satisfactory service and desired characteristic of the treated effluent, for two months before handing over the plant to the Owner. During this, the contractor shall train the Owner's operational stall without any extra cost to the Owner. The Contractor shall also have to guarantee the quality of the treated final effluent to meet the specification mentioned already. In case the quality of treated effluent varies from what is required, the contractor shall rectify the plant at no extra cost so as to achieve the requisite performance guarantee and satisfactory commissioning of the plant to the client/Consultant. Despite the first opportunity given to the contractor to effect rectification so as to achieve compliance, and In case the quality of treated effluent varies again from what is required, the contractor will be given one more opportunity to rectify the plant and bring the treated effluent to the required quality.

If the contractor fails in both opportunities to achieve the required result as aforesaid, then the Architect/ Owners' Engineers/ Owner will have the liberty to engage another agency to carry out whatever rectification necessary at the contractor's risk, cost and

all expenses which will be recovered from any moneys due to the Contractor and in addition, the retention money being forfeited by the Owner.

The contractor shall furnish the figures for average daily consumption of nutrients / Chemicals, if any. All the above guarantees will be based on collection and analysis of samples as mentioned in clause below.

Comprehensive Maintenance Period

The contractor on completion of the DLP period shall enter into an agreement with the client for providing comprehensive maintenance of the system for a period of 8 years. The contractor shall quote the rates for providing the comprehensive maintenance along with this tender and shall enter into agreement with the client at the quoted rates given along with this tender.CMC of 8 years should be quoted but will not be considered for evaluation of this tender.

Oxygenation Capacity of Diffusers

The contractor, if directed by Consultant, shall at his own cost prove the Oxygenation capacity guaranteed by him for the diffusers provided by conducting Oxygenation capacity tests on the unit by any standard and internationally recognised method to be approved by the Consultants.

1.16 MECHANICAL GUARANTEES

The Contractor shall guarantee for a period of **two years** for the failure of any particular part of the equipment. In the event of failure of any particular part of the equipment more than three times during the guarantee period, the Contractor shall replace it. In case it is found that the above mentioned failure is due to some other connected part of the equipment, that part shall also be rectified or replaced by the contractor to avoid such failures in the future. The guarantee for such replaced parts shall be extended by one year from the date of last replacement.

1.17 COLLECTION AND ANALYSIS OF SAMPLES

The guaranteed effluent shall be based on complete analysis of samples collected after stabilization of the plant.

Minimum. 2 numbers .of Raw Effluent and 2 numbers of Treated Effluent samples per month shall be collected and got analyzed at the Pollution control Board approved Laboratory and should be submitted to consultant for approval

Efficiency of plant and process after secondary clarifier should be presented to consultant by collecting sample at outlet of clarifier and analyzing the sample for BOD5 days and TSS.

1.18 ANNUAL MAINTENANCE

The contractor shall include in the offer for maintaining the treatment plant including all the consumables etc., qualified personnel shall be posted on the site on shift basis, to take the sampling and carry out the tests. A complete record has to be maintained for all the tests carried out at regular intervals.

The senior chemist of the contracting firm shall visit at least once in two months for monitoring plant operation.

Also one Senior Mechanical Technician shall visit the plant for inspection and supervision of maintenance of all equipments.

NOTE:

- Data sheet to be duly filled before submission
- Provide detailed specification with guarantee details of the equipments, for which data sheet is not filled.
- Provide efficiency curves and catalogues for the equipments used.
- Provide as built drawing after completion of project.
- Vendor to furnish the manual for operation and maintenance with trouble shooting by his experience.
- Vendor to furnish the list of spare parts, which are frequently required for trouble free operation.
- Vendor to submit separate drawing and details for cleaning and backwashing of membranes.

- Vendor to provide warranty of membranes with manufacturer certificate.

1	**Raw effluent pump**
2	**Sludge pumps**
3	**Membrane**
4	**Screw pumps**
5	**Filter press**
6	**Air compressor**
7	**UV sterilizer**
8	**Automatic Screen**
9	**Motors**
10	**i. Galvanised Pipes**
11	**ii GI fittings**
12	**Gate valves/Non-return valves**
13	**Foot valves**
14	**Butterfly valve**
15	**ACB / MCCB / SFU / LBS**
16	**CONTACTORS / OLRS**
17	**MCB / ELCB**
18	**MCB DB**
19	**DIGITAL METERS**
20	**Kwh / MDM / MDC METERS**
21	**LED INDICATING LAMPS / PBS**
22	**SELECTOR SWITCHES**
23	**LIGHT FIXTURES & MOTION DETECTORS**
24	**SWITCHES / SOCKETS (MODULAR) OUTLETS IN METAL BOXES**

The makes shall be as approved by the Engineer-in-charge

BILL OF Quantities - un-priced BOQ to be provided by the contractor

Section III – PROFORMA APPLICATION FORMS

LETTER OF TRANSMITTAL

From:

To
Deputy Vice President (Technical)
HLL Lifecare Limited,
Infrastructure Development Division,

"Adarsh", T.C 6/1718(1),
Vettamukku, Thirumala P.O,
Thiruvananthapuram- 695 006

Subject: Design, Construction, Supply, Erection, Testing & Commissioning of Sewage treatment plant of 120 KLD capacity complete in all respects including MCC panel room, DG set & all contingent Electrical, Mechanical, piping and instrumentation works and including operation & maintenance after successful commissioning.

Sir,

Having examined the details given in the Tender press notice and Qualification documents for the above work, I/we hereby submit the qualification document and other relevant information.

1. I/We hereby certify that all the statements made and information supplied in the enclosed forms A to F and accompanying statements are true and correct.
2. I/We have furnished all information and details necessary for pre-qualification and have no further pertinent information to supply.
3. I/We authorize HLL Lifecare Limited to approach individuals, employers, firms and corporation to verify out competence and general reputation
4. I/We submit the documentary evidence in support of our suitability, technical know-how and capability for having successfully completed the following works and for the details furnished by us in the proforma attached below:

Name of work

Seal of applicant
Date of submission Signature(s) of Applicant

FORM 'A'

FINANCIAL INFORMATION

I. Financial Analysis – Details to be furnished duly supported by figures in balance sheet/. The balance sheet and profit & loss account for the last five years duly certified by the Chartered Accountant shall be submitted on provisional prequalification by HLL.

A. Gross Annual turnover on similar works.

Years

2011-12	2012-2013	2013-2014

B. Profit/Loss

Years

2009-10	2010-11	2011-12	2012-13	2013-14

II.Financial arrangements for carrying out the proposed work.

III. The following certificates will be enclosed:

1. PAN & Service tax registration

Signature of Chartered Accountant with Seal Signature of Applicant

FORM 'B'

DETAILS OF ALL WORKS OF SIMILAR CLASS COMPLETED DURING THE LAST FIVE YEARS ENDING LAST DAY OF THE MONTH OF JULY 2014

SL.NO	Name of work/ project and location	Owner or sponsor	Cost in Crores with breakup for components as in para 3, section I	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation /arbitration pending /in progress with details*	Name and address /telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

* Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Applicant

FORM 'C'

PROJECTS UNDER EXECUTION OR AWARDED

SL.NO	Name of work/ project and location	Owner or sponsor	Cost in Crores with breakup for components as in para 3, section I	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation /arbitration pending /in progress with details*	Name and address /telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Applicant

FORM 'D'

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORM "C" & "D"

1. Name of work /Project & Location.

2. Name of Contractor

3. Agreement No.

4. Estimated Cost.

5. Tendered Cost

6. Final Cost on completion of the project :

7. Date of start

8. Date of completion
   (i) Stipulated date of completion
   (ii) Actual date of completion

9. Amount of compensation levied for delayed completion, if any

10. Amount of reduced rate items, if any.

11. Performance Report

1) Quality of work	Very Good/Good/Fair/Poor
2) Financial soundness	Very Good/Good/Fair/Poor
3) Technical Proficiency	Very Good/Good/Fair/Poor
4) Resourcefulness	Very Good/Good/Fair/Poor
5) General behavior	Very Good/Good/Fair/Poor

Dated: Executive Engineer or Equivalent

FORM 'E'

STRUCTURE & ORGANIZATION

1. Name & Address of the applicant
2. Telephone No./Fax No.
3. Legal status of the applicant (attach copies of original document the legal status).
   (a) An individual
   (b) A proprietary firm
   (c) A firm in partnership
   (d) A limited company or Corporation
4. Particulars of registration with various Government bodies (attach attested photocopy).

   Organization/Place of registration Registration No.

   1.
   2.
   3.

5. Names and Titles of Directors & Officers with designation to be concerned with this work.
6. Designation of individuals authorized to act for the organization.
7. Was the applicant ever required to suspend construction for a period of more than six months continuously after you commenced the construction? If so, give the name of the project and reasons of suspension of work.
8. Has the applicant, or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.
9. Has the applicant, or any constituent partner in case of partnership firm, even been debarred/black listed for tendering in any organization at any time? If so, give details.
10. Has the applicant, or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.
11. In which field of Civil Engineering construction the applicant has specialization and interest?
12. Any other information considered necessary by not included above.

Signature of Applicant

FORM 'F'

DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL TO BE EMPLOYED FOR THE WORK

S. No.	Designation	Number available for this work	Name	Qualification	Professional experience and details of work carried out	Responsibility	Remarks
1	2	3	4	5	6	7	8

Signature of Applicant